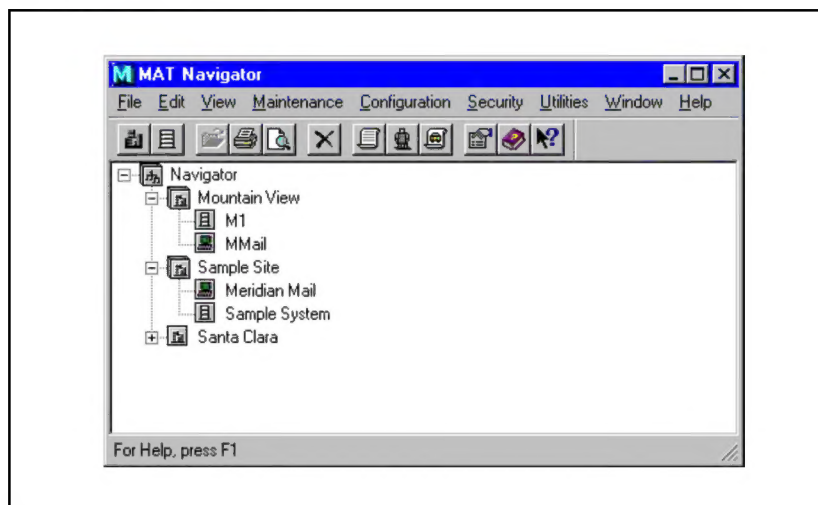

MAT Navigator and System Window

The Navigator is MAT's main window—it allows access to all MAT systems and services. The Navigator shows the names and types of all the systems that are available to the current user, and allows you to group the systems into sites for more convenient access.

Figure 42
Navigator window



The Navigator provides the following functions:

- Displays a “tree” structure for Sites and Systems on the network managed by the current user. You access systems at a site by opening that site.
- Allows you to launch the System Window (See “System Window” on page 100.)
- Allows you to configure and administer MAT data: Sites and Systems, Users, and so on
- Allows you to launch the utility applications, for example the Scheduler
- Allows you to display the licensing and release information for all installed MAT applications

Figure 43 illustrates these functions. For further details, see “MAT Navigator and System Window” on page 81.

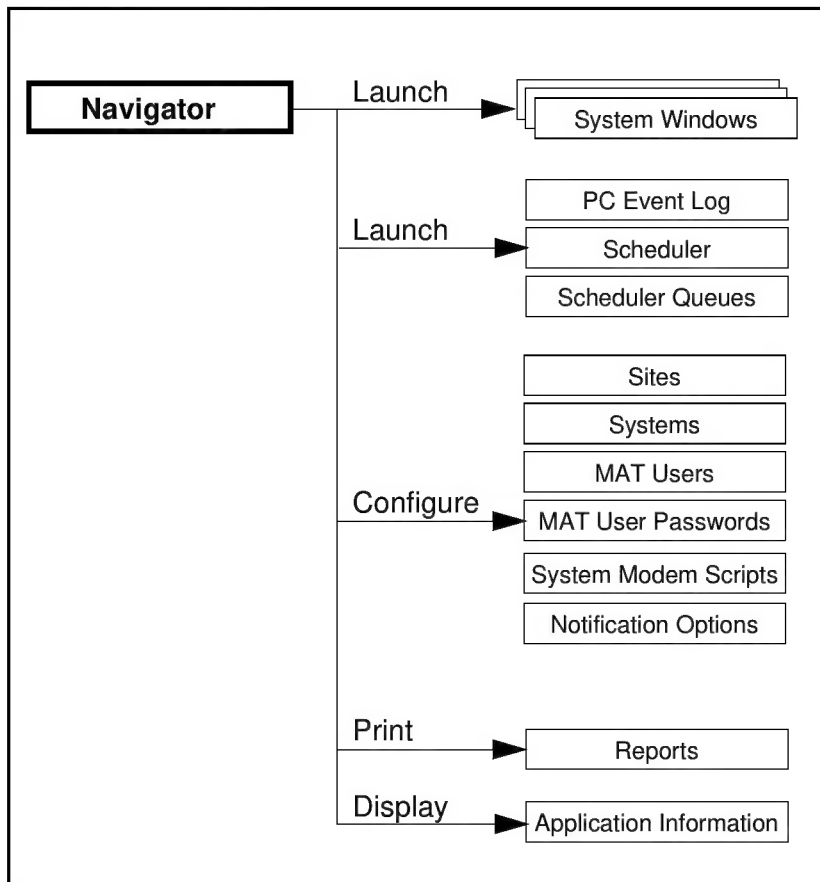
Using the Navigator

The MAT Navigator allows you to access any Meridian 1 system. In the Navigator, you open the site of interest to choose a system on which to work. Double-click a system to open its System window and launch any of the MAT applications to work on that system.

Open a site by double-clicking its name or clicking the “+” symbol next to the site. The “+” changes to a “-” when the site opens. An open site displays all systems at that site. Close a site by clicking the “-” symbol.

For Meridian 1 systems, the components that make up the system appear in the system window. For non-Meridian 1 systems or an application such as Meridian Mail, MAT displays a terminal emulation window.

Figure 43
Navigator functions



Logging in and Launching the Navigator

Select **MAT** in the Windows 95 **Programs** list. The login dialog appears (see Figure 44). Enter your User ID and password. The Navigator window appears as shown in Figure 45.

Figure 44
Login dialog box

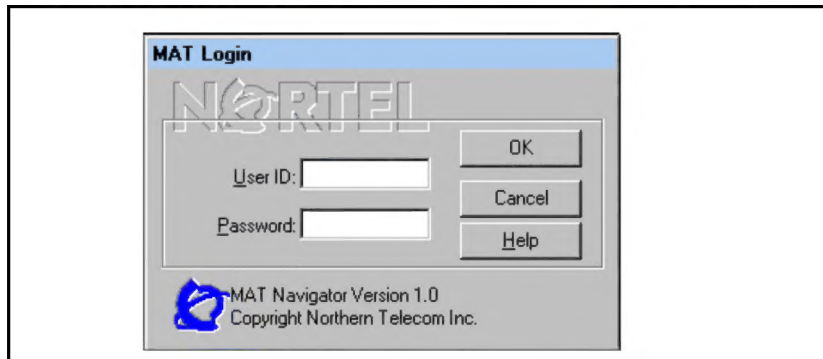
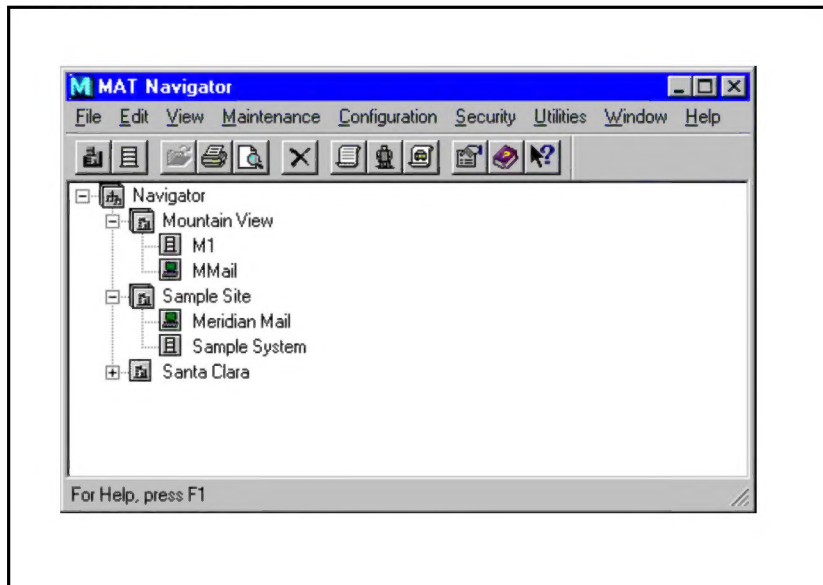


Figure 45
Navigator window



Navigator Menus

The Navigator window includes the following commands in the menu bar—keyboard shortcuts are shown after the command names:

Table 2
File menu

Command	Description
Open	Opens the selected site or system. Opens a System Window (or VT220 Window—for Meridian Mail, etc.) if a system is selected. See “System Window” on page 100.
Print <Ctrl>P	Prints all sites or selected sites (and associated systems) via an option in the print dialog.
Reports	Displays the complete list of reports for this window.
Print Preview	Displays information on the screen as it will appear in print
Print Setup	Displays the standard printer setup dialog to let you select a printer and printer connection
Properties	Displays detailed information about the selected site or system. This operation is also available in the right mouse button popup menu. Using this command, you can change the site or system name, location, contact information, and (for systems) communications parameters, application data, system data, and customers. Note: If you alter a site, the New System button is disabled until the site data is saved via the Apply button (this can take a moment). See “Site and System Administration” on page 90.
Exit	Allows you to: • log out of MAT while allowing the Scheduler and Queue to run in the background or • terminate MAT which disconnects from all systems and terminates all MAT applications and does not allow the Scheduler and Queue to run in the background.

Table 3
Edit menu

Command	Description
Delete	Deletes a selected site or system.

Table 4
View menu

Command	Description
Toolbar	Displays or hides the Toolbar
Status Bar	Displays or hides the Status Bar at the bottom of the window

Table 5
Maintenance menu

Command	Description
PC Events	Opens the log of PC events.

Table 6
Configuration menu

Command	Description
Add Site	Adds a new site to the Navigator.
Add System	Adds a new system to a site in the Navigator.
Move System	Moves a system from one site to another.
System Modem Scripts	Allows you to create an automated modem setup script.
Event Notification	Allows you to change alarm notification options for new critical system alarms.

Table 7
Security menu

Command	Description
MAT Users	Adds or deletes users from MAT.
Change Password	Displays a dialog to allow you to change your user password.

Table 8
Utilities menu

Command	Description
Scheduler	Allows you to manage scheduled tasks.
Queues	Allows you to manage the queue for scheduled tasks.

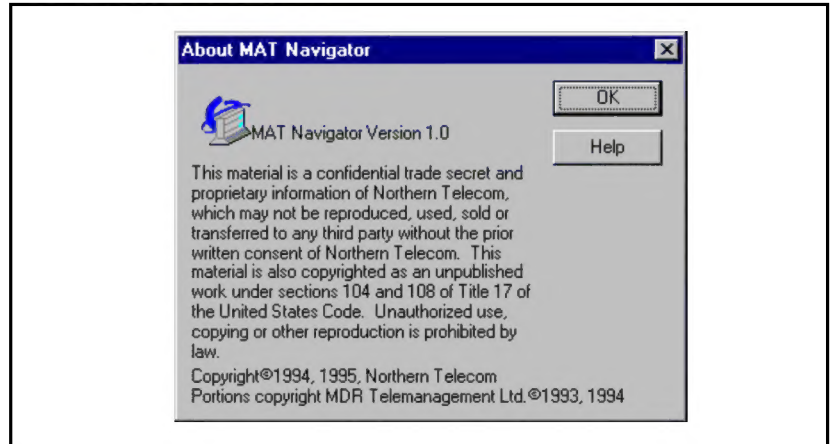
Table 9
Window menu

Command	Description
Arrange	Cascades (organizes on the screen) open windows for easy access.

Table 10
Help menu

Command	Description
Help Topics	Displays the index of help topics
What's This?	Provides context-sensitive help on the next item you select in the tree, any pull-down menu command, or toolbar icon. Clicking anywhere else takes you to the first topic in the help topic list. This operation is also available in the right mouse button popup menu. Note: Since each command in MAT is completely defined in the on-line help, many of the details of menus or dialog boxes are not discussed in this document. This is the power of on-line help—you get the guidance you need while you are running the software without the need to refer to a book.
About MAT Navigator	Displays the software version for the Navigator.
About MAT Applications	Displays all installed MAT applications. If you click on an application, further details appear.

Figure 46
About Navigator window



Toolbar

The Navigator toolbar includes several buttons that act as shortcuts to the commands available in the menus. The function of each button in the toolbar appears when you move the mouse over the button. See Figure 35.

Figure 47
Navigator Toolbar



Status Bar

A Status Bar is located at the bottom of the window. To display or hide the Status Bar, use the **Status Bar** command in the View menu.

The Status Bar describes actions of the menu commands as you use the mouse to navigate through menus. It also describes the actions of the Toolbar buttons as you press them. When you choose a menu command, the Status Bar describes the progress of the command while it executes. For example, the Status Bar shows **Printing text** when you choose **Print** from the File menu.

Site and System Administration

A site is typically a physical location containing one or more systems. There are several types of systems defined in MAT 5, for example, Meridian 1 and “Other” systems, such as Meridian Mail.

Users with **Administrator** privileges can use the Navigator **Configuration** menu to add, change, and delete sites and systems. The properties of sites and systems must be defined before you can connect to a system and perform any administrative or maintenance tasks. See “Configuring Sites, Systems, and Users” on page 49.

Scheduler

The MAT Scheduler is used to manage scheduled, repetitive tasks. It allows you to set up predefined tasks and schedule them to run at specific dates and times. Such tasks as system updates or data collection can be set up once for multiple execution.

A task is a specific activity that the MAT system can perform, such as updating the system, generating a report, or collecting data. Note that only jobs can be scheduled; individual tasks cannot. A job may contain a single task or multiple tasks.

With job scheduling, you can request that one or more activities be performed once or on a recurring basis. When a scheduled job runs, it executes its component tasks in the sequence you specify. The Scheduler then sends these tasks to the Queue Manager at the specified time. If multiple tasks are in the same queue, the Queue Manager attempts to run them in queue sequence. You can access the Queue Manager to review and change the priority of task execution.

Accessing the Scheduler

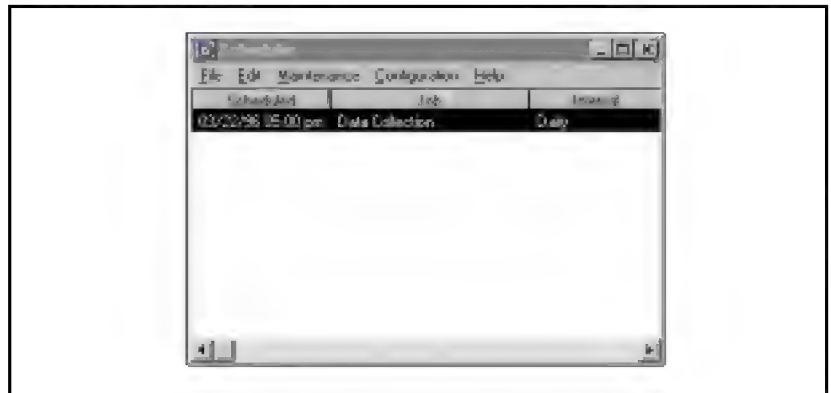
You can access the Scheduler in two different ways. You can either directly access the Scheduler from the MAT Navigator and then create a job and its component tasks, or you can access the Scheduler from a supported application, such as Station Administration.

To access the Scheduler directly from the Navigator, click **Scheduler** from the Utilities drop-down menu of the MAT Navigator window. This may be necessary if no jobs have been previously scheduled in MAT and you wish to create or edit a scheduled job without running any supported applications.

To access the Scheduler from a supported application, select the **Schedule** command where it appears. This is the more common method of running a scheduled job since most required tasks are run from a particular application (e.g., data collection in Call Accounting and Traffic Analysis).

Once you access the Scheduler, the following window will appear.

Figure 48
Scheduler window



How the Scheduler works

The Scheduler reads job data and builds a list of tasks and their schedule information in memory. Every minute, the Scheduler compares the current time with the scheduled time of each entry in the task list. When the times match, the tasks are executed sequentially, allowing one task to complete before the next task begins. If you close the Scheduler, the task list is lost—the task list is rebuilt the next time you run the Scheduler.

Jobs & Tasks

The MAT Scheduler is used to execute activities (jobs) at scheduled dates and times. Each job consists of at least one task (or set of tasks) which can then be scheduled to run at a specific time. A task is a specific activity which the MAT system will execute as part of the job.

Only jobs can be scheduled; tasks cannot be scheduled separately. When the job runs, it executes its component tasks as they are listed in the Task List of the Job Properties dialog. In most cases, each job will only contain one task.

If a job contains multiple tasks, each task will be sent to the queue one after the other once the job starts. The Scheduler will send these tasks to the Queue Manager at the time of execution and run the Queue Manager accordingly.

If multiple tasks are waiting in a queue to run at the same time, the Queue Manager will attempt to execute each task sequentially as it appears in its queue.

Job Summary Display

As each job is configured and added to the Scheduler, it will be displayed in its main window. The main Scheduler window contains this list of jobs in this Job Summary Display grid.

You can use the cursor commands to resize and move each column in this grid as required. This Job Summary Display lists all of the configured jobs and their basic information. From this display grid, you can scan through each job and select it for editing.

The Job Summary Display grid lists the following information for each configured job:

- Scheduled
- Job
- Interval

Configuring & scheduling a job

Once you access the MAT Scheduler, you can begin to schedule its jobs and add tasks to it. Use the Scheduler editor commands to create and update jobs throughout your session.

The first step in setting up a job is to select a job and assign a single task or group of tasks to this job. You can select an existing job to edit or create a new job.

Once you have assigned the tasks to the job, you must specify the date and time at which the job will be run as well as any intervals for subsequent executions of the job.

If you are creating a new job from another MAT application, that is if you are scheduling an activity from that application, then the system will directly access the Job Properties dialog. From this dialog, you can enter the job's general information, its individual tasks and its scheduled date and time.

To create a new job directly from the Scheduler, click **Add Job** from the Configuration drop-down menu. Again, this will access the Job Properties dialog from which you can enter this job's information.

To edit an existing job, click once on the job record line in the Job Summary Display to highlight it and click **Properties** from the File drop-down menu (or simply double-click on the job record line). Again, this will access the Job Properties dialog from which you can edit this job's information.

Once you have accessed the Job Properties dialog, enter the job's information by selecting the following tabs:

- General
- Task
- Schedule

Once you have entered the job's details, tasks and scheduling information, click **OK** to save it and exit to the Scheduler main window.

If you accessed this function from the Scheduler main window, then closing the Job Configuration dialog will return you to the main window.

If you scheduled a job from a task command dialog (from another application), then this will return you to that application. The job will then be executed at its scheduled time.

Example job configuration

The following example highlights the main steps involved in configuring and scheduling a job which is invoked from another MAT application.

Scenario

A user wishes to schedule a data collection from MAT Call Accounting daily at 5:00 p.m. The initial data collection will be run on the current day which is 03/22/96.

Steps to scheduling a job

- 1 Open a system and access Call Accounting. From Call Accounting, click **Communications** and click **Schedule Data Collection** from its drop-down menu. Since you are creating a new task, you must either create a new job to which this task belongs or add the task to an existing job. Remember that an activity such as data collection is a task which is associated with a job. You cannot schedule a task; only a job.
- 2 When you click **Schedule Data Collection** from Call Accounting, the Add Task for Scheduling dialog will appear prompting you to either add this task to an existing job or create a job and add the task to the new job.

Note: For this example, you will create a new job. Therefore, click **Add New Job** from this dialog. This will access the Scheduler Job Properties dialog.

- 3 In the Job Properties General tab fields, enter the following:
Name: **Data Collection** (used for informational purposes)
Queue: **Data Collection** (used by the Queue Manager to create a queue by this name)
- 4 Click the **Task** tab to review the tasks which are added to this job. Notice that the Data Collection command is the only task in this list.

- 5 Click the **Schedule** tab to enter the scheduling criteria for this job. In the Schedule fields, enter the following:

Interval: **Daily**

Start at: Month: **03** Day: **22** Year: **96**

Hour: **5** Minute: **00** am/pm: **pm**

- 6 Click **OK** to save this configuration. Notice that the Job Summary Display grid will appear with this job added to it.

This completes the example job configuration. This job will then be run at the scheduled time. Ensure that the Scheduler is running at the scheduled time so it can run the job.

Device contention

The Queue Manager contains certain restrictions when managing multiple queues for a single device. This applies when multiple jobs are sent by the Scheduler to the Queue Manager for execution and therefore have multiple queues stored in the Queue Manager database. A job is a group of tasks which is sent to the Queue Manager as a queue. If these queues attempt to access the same device (e.g., COM port) at the same time, then only one queue will be able to use it successfully. All other queues will NOT be able to access that device and will therefore not run.

The following example helps demonstrate this contention.

Example for device contention

The following jobs have all been scheduled to run daily at 12:00pm. They will all invoke separate queues which will attempt to use COM 2 on the MAT PC.

- Call Accounting data collection
- Call Tracking real time access
- Traffic Analysis data collection

At 12:00pm, each of these jobs will be sent to its own queue in the Queue Manager which will then attempt to access COM 2. Since they will all attempt to access COM 2 at the same time, COM 2 appears to be available to each of them. Each queue will then run a task. However, COM 2 will **ONLY** be available to the first task which executes. Since the remaining tasks cannot access COM 2, they will not execute.

Late Execution

This device contention issue also applies to queues which have Late Execution enabled. If the MAT system is shut down and starts up again, any jobs which have Late Execution enabled (and their scheduled times have elapsed) will attempt to run immediately. If these jobs attempt to access a single device at this time, then only the first task will be able to access it. All others will fail.

To prevent this contention problem from occurring for jobs with late execution, you should use caution when enabling this option. Ensure that only the required jobs have this option enabled or verify that they will not access the same device during a system shut down and start up.

Solution

To prevent this from occurring during normal system operation, use the following guidelines.

- If you need to schedule multiple jobs for a single device all at the same time, or if you cannot schedule the jobs so that you are sure that the device will be released in time, then schedule the jobs as multiple tasks sent to a single queue. The Queue Manager can then manage these tasks in the single queue and send them to the device as each task is completed. Each task in the queue will wait for the previous task to release the device before attempting to access it. This way, you will ensure that all of the tasks will be able to access the device and execute successfully.
- This is a recommended solution since it allows the Queue Manager to manage the tasks for a single device allowing each task to use the device as it becomes available.
- If you need to schedule jobs at different times and they all require a single device, ensure that these jobs are scheduled to run at times far enough apart to allow the device to be released by a queue before the next job is scheduled to run. Also ensure that the Late Execution option is disabled for each job in case of a system shut down and start up.

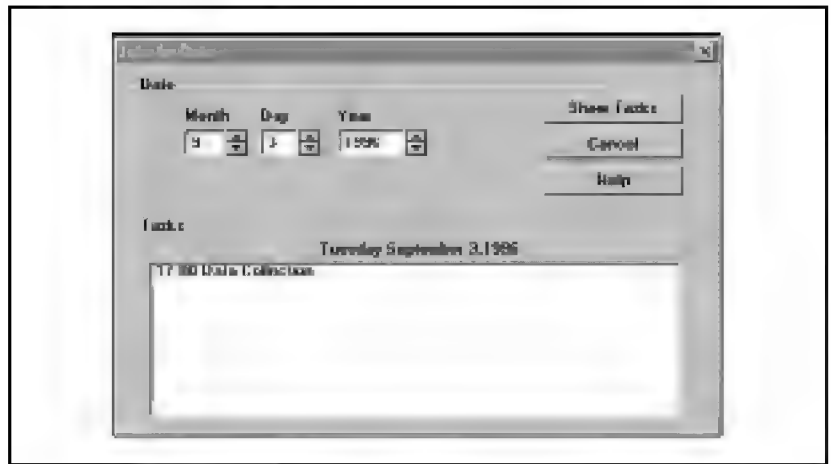
File menu

The File menu contains functions which allow you to manage and edit the configured jobs as well as print reports and close the Scheduler.

The following is a list of these functions:

- Suspend
- Jobs by Date (Figure 49)
- Print Setup
- Reports
- Properties
- Close

Figure 49
Jobs by Date window



Edit menu

The Edit menu contains the Delete function which is used to delete the configured jobs which are listed in the Job Summary Display.

Maintenance menu

The Maintenance menu contains functions which allow you to enable, disable or run the configured jobs which are listed in the Job Summary Display.

The following is a list of these functions:

- Enable
- Disable
- Run Now

Configuration menu

The Configuration menu contains functions which allow you to create and edit the Scheduler jobs and tasks as well as access the Queue Manager.

The following is a list of these functions:

- Add Job
- Add Task
- Queue Manager

Queue Manager

The MAT Queue Manager is used to store and execute the scheduled jobs as defined in the MAT Scheduler. The role of the Queue Manager is to ensure that a sequence of tasks are performed in a specific order, allowing each task to run to completion in a designated order before executing the next (e.g., ensuring that a traffic data collection is run before a traffic data parse).

When a job is scheduled to occur, the Scheduler sends all tasks associated with that job to the Queue Manager for assignment to a specific queue for handling.

The Queue Manager is also useful in situations where a non-shareable facility is required, such as a communications port. A communications port may serve a number of communications scripts which cannot all run simultaneously. The Queue Manager allows the system to manage multiple requests through a single queue model.

The Queue Manager contains a number of individual queues. Each queue is responsible for a job, although multiple jobs may share a single queue.

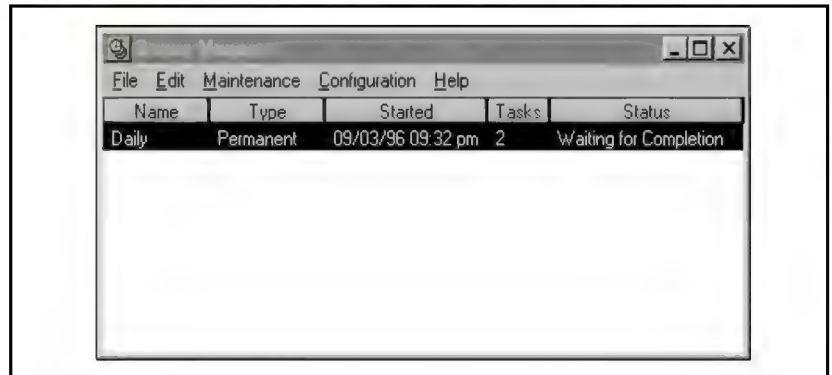
The Queue Manager is responsible for placing jobs and tasks into the correct queue for handling. Although there is only one Queue Manager, there may be a number of active queues. Each queue executes its own tasks sequentially, but all queues operate independently.

Accessing the Queue Manager

To access the Queue Manager directly from the MAT Navigator, click **Queue** from the Utilities drop-down menu of the MAT Navigator window. The Queue Manager window will appear with all of the configured queues listed in its main window—the Queue Summary Display. Once you have accessed the Queue Manager, you can use it to create and edit its configured queues.

The Queue Manager window is shown in Figure 50.

Figure 50
Queue Manager window



The Queue Manager window lists all of the configured queues and their basic information. From this display, you can scan through each queue and select it for editing.

Configuring a queue

Once you have created and added a queue to the Queue Manager using the Scheduler, you can access it again to edit its properties or add tasks to it as required.

To edit a queue, either double-click on the queue record in the Queue Summary Display grid or click once on the queue record and click **Properties** from the File drop-down menu. Edit this queue by selecting from the following tabs in this dialog:

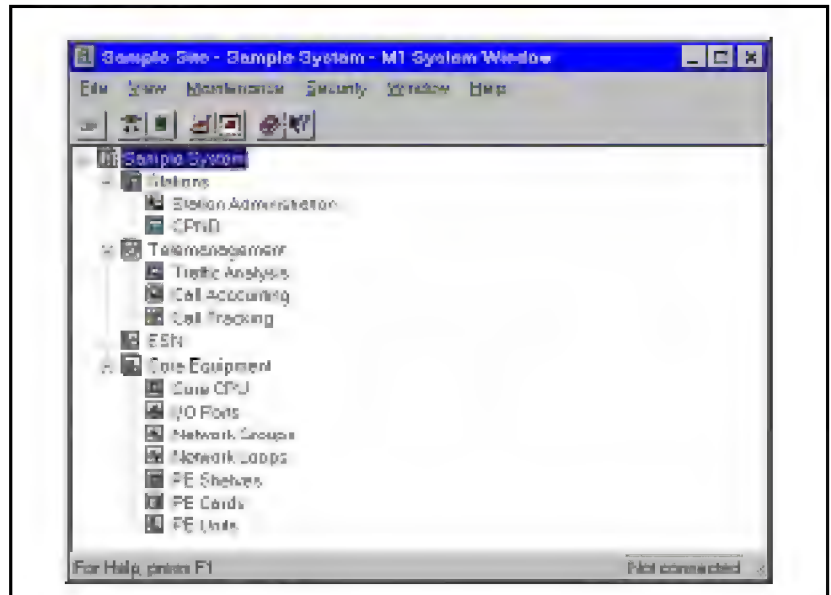
- General
- Tasks

Once you have entered the information for each queue, click **OK** to save it and exit to the Queue Manager main window.

System Window

From the Navigator, once you double-click the system on which you wish to work, the System window for that system appears. See Figure 51.

Figure 51
System window



The System window allows you to launch the following applications (some of these applications are purchased separately):

- Alarm Banner
- Events
- System Terminal (Ethernet or PPP)
- System Terminal VT220 (serial)
- Core Equipment
 - Core CPU window
 - I/O Ports window
 - Network Groups window (not applicable for Option 11C)
 - Network Loops window (includes B and D-channels window)
 - PE Shelves window (not applicable for Option 11C)
 - PE Cards window
 - PE Units window
- Station Administration
- Traffic Analysis
- Call Accounting
- Call Tracking
- ESN Analysis and Reporting Tool

System window menus

The following tables detail the menus available in the system window.

Table 11
File menu

Command	Description
Open	Opens the selected application.
Session Connect	Establishes a connection to the M1system.
Session Disconnect	Disconnects MAT from the M1 system.
Update System Data	Updates system properties on the PC by copying this information from the switch.
Close	Closes the System window and all related windows.

Table 12
View menu

Command	Description
Status Bar	Displays or hides the Status Bar.
Toolbar	Displays or hides the Toolbar.

Table 13
Maintenance menu

Command	Description
Alarm Banner	Launches the Alarm Banner application.
Events	Launches the Events application.
System Terminal	Launches the System Terminal application. See “System Terminal” on page 107.

Table 14
Security menu

Command	Description
Connected Users	Displays the list of users currently connected to this system.

Table 15
Window menu

Command	Description
Arrange	Arranges the system's windows in a cascade fashion. The Alarm Banner is not affected.
Close Related Windows	Closes all windows belonging to this system (except the System window itself).

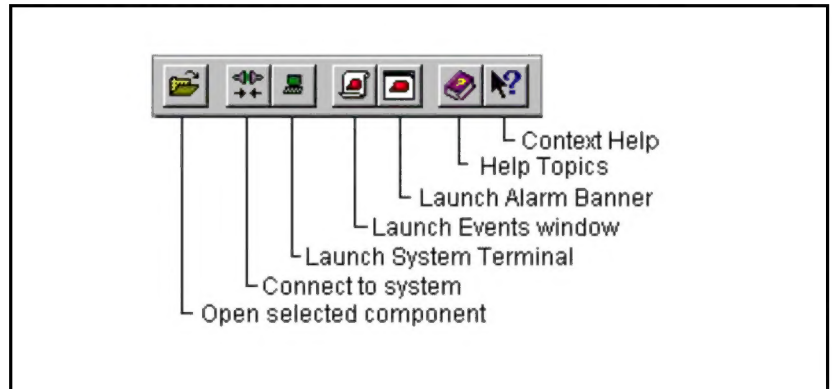
Table 16
Help menu

Command	Description
Help Topics	Displays the index of help topics.
What's This?	Provides context-sensitive help on the next item you select in the tree, any pull-down menu item, or toolbar icon. Clicking anywhere else takes you to the first topic in the help topic list. This operation is also available in the right mouse button popup menu.
About System Window	Displays software version information for the System window

Toolbar

The System window toolbar includes several useful buttons. The function of each button in the toolbar appears when you move the mouse over the button. See Figure 52.

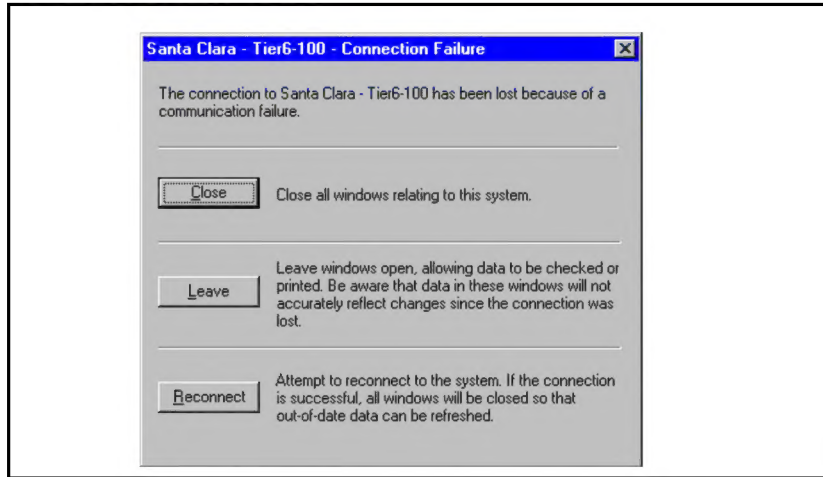
Figure 52
System window Toolbar



Responding to a connection failure

If you are connected to M1 system and that connection fails, a warning message appears. See Figure 53. You are given the following options:

Figure 53
Connection Failure dialog



- Close all system windows and reconnect to the system
 - Leave the system windows open so that you can copy or print any or all of the following information:
 - Command results in the System Terminal window or any open Maintenance window.
 - Alarms or events in the System Event Log.
 - Maintenance window objects, such as network loops within the Network Loops window.
- Note:** When you have finished printing the desired information, close the system window and reconnect to the system.
- Attempt to reconnect to the system.